

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YOSHIKA KIMURA and TAKEO ISHIBASHI

Appeal No. 2004-1436
Application No. 09/583,865

ON BRIEF

Before KIMLIN, OWENS and TIMM, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-12 and 19, all the claims remaining in the present application.

Claims 1 and 9 are illustrative:

1. A method for forming a resist pattern, comprising the steps of:

pre-baking a semiconductor substrate having a surface to which a resist has been applied;

forming a film on said resist comprising an overlying layer material containing a water-soluble acid substance and a water-soluble photo base generator

Appeal No. 2004-1436
Application No. 09/583,865

re-baking said semiconductor substrate;

exposing said overlying layer material and resist to light beams to form a resist pattern;

post-baking said semiconductor substrate;

developing said resist using a predetermined developing solution; and

removing said overlying layer material together with said developing solution.

9. An article comprising an overlying layer material covering a resist layer, the overlying layer comprising a water-soluble acid substances and a water-soluble photo base generator.

The examiner relies upon the following references as evidence of obviousness:

Watanabe et al. (Watanabe)	5,529,888	Jun. 25, 1996
Winkle	5,650,261	Jul. 22, 1997
Kazumasa et al. (JP '630) (Japanese patent)	JP 06-118630	Apr. 28, 1994

Appellants' claimed invention is directed to incorporating a water-soluble photo base generator into an overlying layer which covers a pattern-forming resist layer. It is conventional in the art to use a cover film comprising an acidic component which deactivates basic components of the air that negatively impact the acid forming agent of the resist. According to appellants, however, the conventional approach results in the undesirable diffusion of acid into the underlying resist layer. Appellants'

Appeal No. 2004-1436
Application No. 09/583,865

solution provides "not only a water-soluble low molecular weight acidic substance in the overlying layer to inhibit diffusion of basic components in the air of a clean room, such as ammonia, into the resist thereby improving environmental resistance, but also by incorporating a water-soluble photo base generator to prevent the diffusion of such acidic substances into the resist" (sentence bridging pages 3 and 4 of principal brief).

Appealed claims 1-12 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '630 in view of Watanabe and Winkle.

We have thoroughly reviewed the respective positions advanced by appellants and the examiner. In so doing, we find ourselves in agreement with appellants that the examiner has failed to establish a prima facie case of obviousness for the claimed subject matter. As a result, for essentially those reasons expressed by appellants, we will not sustain the examiner's rejection.

The examiner appreciates that JP '630, the primary reference, fails to teach the presently claimed photo base generator in a layer overlying the resist layer. To remedy this deficiency the examiner cites the background teachings of Watanabe which reference JP '630, the primary reference.

Appeal No. 2004-1436
Application No. 09/583,865

However, the background of Watanabe only teaches that the ammonium weak acid salts exemplified by JP '630 "can deactivate acid on the chemically amplified resist surface, also failing to overcome the above-mentioned PED problem" (sentence bridging columns 2 and 3). Consequently, we agree with appellants that the referenced disclosure of Watanabe fails to provide the requisite teaching or suggestion of including the presently claimed photo base generator in the overlying layer of JP '630.

As for Winkle, appellants have accurately pointed out that Winkle only discloses the inclusion of a photo base generator in the resist composition. Manifestly, such a disclosure also fails to provide the requisite teaching or suggestion of modifying the composition of the overlying layer of JP '630 in the manner required by the appealed claims.

Accordingly, while the examiner reasons that "one of ordinary skill in the art would have been motivated to incorporate a known photobase generator into the said water soluble composition of Kazumasa [JP '630] in order to eliminate the deactivation of the acid on the chemically amplified resist thereby correcting the known deficiencies of Kazumasa, as identified by the background teachings of Watanabe" (page 5 of Answer, second paragraph), we concur with appellants that such

Appeal No. 2004-1436
Application No. 09/583,865

motivation would have arisen, not from the cited references, but from the hindsight gleaned from appellants' specification.

Accordingly, based on the foregoing, the examiner's decision rejecting the appealed claims is reversed.

REVERSED

EDWARD C. KIMLIN)	
Administrative Patent Judge)	
)	
)	
)	
)	
TERRY J. OWENS)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	
)	
)	
CATHERINE TIMM)	
Administrative Patent Judge)	

ECK:clm

Appeal No. 2004-1436
Application No. 09/583,865

McDermott, Will & Emery
600 13th St., N.W.
Washington, DC 20005-3096